

The Purpose of Amateur Radio

The Amateur Radio licence is issued to enable the holder to learn more about radio communication and its equipment. [BR68 1.(1)] This is referred to as self-training in communication by *radio telecommunications*.

The licensee is also encouraged to carry out technical investigations.

The term *wireless telegraphy*, used in BR68 until 8/9/2000, gave the impression that Radio Amateurs were restricted to using a Morse key or a teleprinter!

This is not the case and examples of other types of transmission are given in BR68 (Notes to the Schedule (d)). The Schedule itself shows which type of transmission may be used on each of the Amateur Bands. See column 5 of the Schedule.

Each type of transmission can use a variety of modulation techniques. For example, speech could be transmitted in any of the following modes:

Amplitude Modulation	(A3E)
Single Sideband (upper or lower)	(J3E)
Frequency Modulation	(F3E)
Phase Modulation	(G3E)

Other Purposes of Amateur Radio

In addition, Licensed Radio Amateurs (NOT Foundation) may transmit messages or take part in exercises in conjunction with the following user service organisations:

British Red Cross Society
St John Ambulance Brigade
St Andrew's Ambulance
Chief Emergency Planning Officer
Police, Fire, Ambulance
Health Authority
Government Department
Public Utilities (EG gas, water, electricity, telephone etc)

[See BR68 12. (1)(o)]

It is also permissible for Radio Amateurs to use certain Amateur Radio Bands [see BR68 1.(3)] to provide communications for international disasters.

What can be said...and to whom?

Licensed Amateurs are only permitted to communicate with other licensed amateurs - where ever they are in the world.
BR68 1.(4) states that amateurs should only send messages relating to technical investigations, remarks of personal character or signals which form part of, or relate to, transmission of the message.

This sounds very 'legal and formal' but it is usually interpreted fairly liberally by both Amateurs and the authorities!

However, there are certain clear prohibitions...

The Amateur Radio Licence does not permit:

Transmissions of music, public broadcasts or speeches.[BR68 1(9)]

Use of Amateur Radio Bands for any business, advertising or other money making activities.

Sending news or messages on behalf of social, political or commercial organisations. [BR68 3.(3)]

However, it is permitted to use Amateur Radio Bands on behalf of (non-profit) Amateur Radio Clubs.

But the RSGB broadcast their news....

The Radio Society of Great Britain does, indeed, compile a weekly news for broadcast to "All Radio Amateurs and Short wave listeners". However, this is authorised by a special licence and is not a disregard of the terms of An Amateur Licence!

In practise, this news is transmitted over the air by various Radio Amateurs, using their own Amateur Radio Equipment, but under a special RSGB callsign. These broadcasts must take place at specified times and on specified frequencies.

Reception

An Amateur Radio Licence obviously authorises reception of transmissions by other Radio Amateurs. Some countries have Amateur Bands not authorised in the UK. It is permitted to receive such transmissions but any reply transmitted by UK Amateurs must be on UK Amateur Frequencies.[BR68 2.(3)]

It is also permitted to receive transmissions made by the Standard Frequency Service. [BR68 1.(13)]

This service provides almost continuous transmissions on precise frequencies for scientific and technical purposes. They can be found on 2.5; 5.0; 10.0; 15.0; 20.0 MHz (plus others)

The Amateurs can use these to check the frequency accuracy of their radio receivers.

The "pecking order"

Column 2 and 3 of the schedule is headed **Status of Allocations** in the UK. What does this mean?

Primary:

Some Amateur Bands are allocated exclusively for the use of Radio Amateurs. These bands are given the status of Primary, with no added restrictions. Examples of such Primary Allocations are 1.83-1.85 MHz and 7.0-7.1 MHz. Other Bands, although designated Primary, have important restrictions. For example, UK Amateurs using frequencies 1.81-1.83 MHz or 50-51 MHz must ensure that they do not interfere with other services in other parts of the World that are authorised to use the same frequencies.

However, Amateurs using the primary allocations 1.85-2.0 MHz or 51-52 MHz, must ensure that they cause no interference to other services either in or outside the UK.

Primary-shared:

The Amateur 80 Metre Band (3.5-3.8 MHz) is a primary allocation but is shared (equally) with other services. In practise this usually means frequencies in this band are used in a first come, first served basis. Thus if an Amateur finds a clear frequency, he may use it even if that frequency is also available to another service. Equally, if another service finds its allocated channel (frequency) to be clear, he can use it and expect no interference from Radio Amateurs. But read BR68 Note to Schedule (c) as this points out that an Amateur cannot claim to be free from interference from other services.

A Radio Amateur is in a privileged position - he chooses a frequency, within an Amateur Band rather than being tied to a precise frequency or channel.

Secondary Allocations:

Many bands are allocated to Amateurs on a Secondary basis. This means that it is primarily intended for other users, but when the frequencies are not in use the Amateurs may use them. However, Amateurs must cease transmission if the frequency is required by the authorised service, even if the Amateur was on the frequency first!

Industrial, Scientific & Medical (ISM) Radio Transmissions

Many Amateur Radio Bands, both Primary and Secondary allocations, have to accept any interference that may be due to ISM equipment.

The Schedule and the exam

Although the Schedule should be understood, it is not necessary to memorise it. A copy of the whole BR68 will be provided with the examination paper for you to refer to.

Power limitations

Column 4 of the schedule gives the maximum power that the radio amateur may use. Radio Amateurs, holding Advanced Licence, may use up to 400 Watts on the majority of the Amateur Bands but some bands or parts of bands have much lower limits. For example when using frequencies between 1.85 - 2.0 MHz, the power limit is 15dBW (32 Watts).

(The units dBW & Watts and their relationship is explained in the technical part of this course)

Questions for Lesson "C"

[QUESTION 17]

Which of the following is not a user service?

- a) British Red Cross Society
- b) British Rail
- c) St John Ambulance Brigade
- d) Kent Ambulance Service

[QUESTION 18]

Licensed Radio Amateurs are not permitted to communicate with:

- a) Foreign Radio Amateurs
- b) Novice licence holders
- c) Citizens Band licensees
- d) Licensed Amateurs within 1km of an operational air-field.

[QUESTION 19]

Which of these is not a class of transmission permitted on Amateur Radio Bands?

- a) Amplitude Modulation
- b) Frequency Modulation
- c) Phase Modulation
- d) Deceptive Modulation

[QUESTION 20]

What is, according to the licence conditions, the purpose of Amateur Radio?

- a) Self-training in radio communication.
- b) Self-training in communication by radio telecommunications.
- c) Self-training in technical communication by wireless.
- d) self-training in personal communication by wireless telephony.

The contents of the BR68 form a major part of the actual *Radio Communication Examination*.

Therefore it is worth your while to read and re-read the BR68 many times so you can find your way around it quickly.